

Remarks

Claim Rejections – 35 USC 103

Claims 1,3 and 11-12 are rejected as being unpatentable over Kawata in view of Dirksen et al (Dirksen).

Valid rejection under 35 USC 103(a) requires evidence of a suggestion or motivation for one skilled in the art to combine prior art references to produce the claimed invention. US Court of Appeals for the Federal Circuit (*Ecolchem inc. v Southern California Edison Co., Fed. Cir.*, No. 99/1043, 9/7/00).

The best defense against hindsight-based obviousness analysis is the rigorous application of the requirement for showing a teaching or motivation to combine the prior art references, according to the court.

Kawata and Dirksen do not motivate or suggest to one skilled in the art to combine these references to produce Applicant's claimed invention.

Recently, in *In Re Sang-Su Lee* (00-1158) the Court of Appeals for the Federal Circuit rendered a decision confirming the above principles. The court analyzed 35 USC 103 requirements starting from the Administrative Procedure Act and held (citations omitted):

“Tribunals of the PTO are governed by the Administrative Procedure Act, and their rulings receive the same judicial deference as do tribunals of other administrative agencies.

“The Administrative Procedure Act, which governs the proceedings of administrative agencies and related judicial review, establishes a scheme of

“reasoned decision making.” Not only must an agency's decreed result be within

the scope of its lawful authority, but the process by which it reaches that result must be logical and rational.

“As applied to the determination of patentability vel non when the issue is obviousness, it is fundamental that rejections under 35 USC §103 must be based on evidence comprehended by the language of that section. (Emphasis added). When patentability turns on the question of obviousness, the search for and analysis of the prior art includes evidence relevant to the finding of whether there is a teaching, motivation, or suggestion to select and combine the references relied on as evidence of obviousness. (Emphasis added)

“The factual inquiry whether to combine references must be thorough and searching. It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with. Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. There must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the Applicant. Teachings of references can be combined only if there is some suggestion or incentive to do so.”

As stated above, **Kawata and Dirksen do not motivate or suggest to a person skilled in the art to combine these references to duplicate the claims of the present invention.**

Dirksen at numbered paragraph 6 of the Office Action teaches that the e-beam and optical lithography are alternatives, it does not show that they were equivalents.

Dirksen, in fact teaches that there are drastic differences: column 5, lines 19-21;
“This (electron-beam) projection system can then no longer be used as an imaging system
for the alignment device.”

Kawata teaches cleaning of a mask of an electron-beam projection-exposure
apparatus.

Claim 1 of the present invention teaches cleaning of “at least some...optical
elements” of “of microlithographic projection exposure devices having optical elements”
and

“having a first UV light source for projection exposure”.

The wording “at least some” defines a number greater than one.

The wording “having” says the optical elements are included in and part of the
exposure device.

The “UV light source” implies that the optical elements must be UV optical
elements.

A mask is not normally considered to be an optical element, but a structured
absorber.

A mask is not part of a projection-exposure apparatus.

It is not sold with the projection-exposure apparatus nor affixed to it.

Masks and wafers are the subjects that are treated by a projection-exposure
apparatus. They are subject to multiple exchanges.

The mask is the only element in an e-beam projection exposure apparatus coming
in contact with the e-beam and thus with a need of decontamination.

Consequently, Kawata only teaches cleaning of said one mask.

UV optical elements are quite distinct from “electron optical” elements.

All UV optical elements – like “visible” optical elements function in contact with the light beam. To the contrary, “electron optical” elements are contactless, affecting electrons by their E or B fields.

Moreover, the e-beam apparatus of Kawata needs vacuum in the exposure system, thus gas/fluid can with the light beam, while “electron optical” elements are contactless, affecting electrons by their E or B fields.

Also, the e-beam apparatus of Kawata needs vacuum in the exposure system. Thus gas/fluid can exclusively be applied to an object located outside the vacuum. To the contrary, the present invention allows for in situ cleaning of all sorts of optical elements.

Thus, there are many differences between Applicant’s claimed invention and Kawata. And neither Kawata nor Dirksen provides any motivation to overcome these differences.

Consequently, the combination of Kawata and Dirksen fails to show or fairly suggest the limitations of Applicant’s claims.

Referring to claim 3 of the present invention, (numbered paragraph 7 of the Office Action) column 5 lines 20-23 of Kawata just states that water vapor at 20 Torr enters the cleaning portion.

Nothing like “parallel” is stated. It is respectfully traversed that at a 20 Torr vacuum level any flow is to be deduced by a skilled person specialist from the entering.

Referring to claim 11, this apparatus claim relates to

“A.... projection exposure device” with

“a DUV excimer laser” as the “source for the projection exposure” and effects “decontamination of optical elements”.

Consequently, claim 11 has the same relevant differences over Kawata as claim 1 and Dirksen and Kawata in the same way do not combine to duplicate the present invention as claimed. Dirksen’s reference to “DUV” does not change this.

Referring to claims 5, 8-10, 14-15, 17-18, the rejections of these claims in numbered paragraph 10 of the Office Action neglects the fact that all these claims (except 15, 17, 18) include a flushing during exposure.

(cf. claim 5: “deflecting... from fluid flow running... during a projection exposure operation”; claim 8: “producing a supply of flushing fluid from a normal operation fluid supply....”

Claim 14: “a gas supply device for normal operation provided as said gas supply....”)

Such is precluded in Kawata’s e-beam apparatus which needs high vacuum.

Referring to claim 2 (numbered paragraph 17 of the Office Action): This claim teaches that in a system with a projection exposure UV-light source - known as having to be of narrow bandwidth – cleaning is made by a source of other, broad bandwidth.

Neither Kawata nor Hunter relate to UV exposure and Dirksen is not related to cleaning, needing narrow band for his measuring systems.

The pure existence of broad band sources, as in Hunter, is in the claim. However, no hint whatsoever is found in the art to use broad band cleaning UV light in a narrow band UV exposure apparatus.

Claim 19 is allowable with base claims 18 and 11.

The wording in numbered paragraph 27 of the Office Action (statement of reasons) seems to be erroneous. Some “not” seems to be missing. Clarification is requested.

New claims 21-23, recited below, are added in this amendment. They are believed to be allowable as are claims 1 and 11.

21. A process of a microlithographic projection exposure device comprising operating said projection exposure device comprising a plurality of optical elements with a first ultraviolet light source and effecting exposure, and

at intervals between exposing,

a cleaning operation comprising applying

a fluid and directing light from a second ultraviolet light source onto at least a portion of said plurality of optical elements.

22. A process according to claim 21, wherein said optical elements comprise surfaces, and the cleaning operation acting upon said surfaces.

Original disclosure of claims 21 and 22 is found inter alia at Page 4, lines 1-7 and in claim 1, 11.

23. A process according to claim 21, wherein said optical elements subject to said cleaning operation comprises lenses.

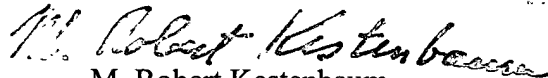
Original disclosure is found in the specification on page 6 lines 3-4.

The priority document is attached.

We respectfully request that the Examiner give further consideration to the claims as now amended and allow them.

A one-month extension of time in which to respond to the outstanding Office Action is hereby requested. Credit Card Payment Form PTO-2038 is enclosed to cover the prescribed Large Entity one-month extension fee of \$110.00. Please charge any additional fees or credit any overpayments to Deposit Account 11-0665. A duplicate of this page is enclosed for this purpose.

Respectfully submitted,



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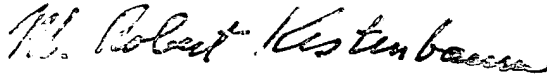
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I hereby certify this correspondence is being deposited with the US Postal Service First Class Mail in an envelope with sufficient postage to PO Box 1450, Commissioner for Patents, Alexandria, VA 22313-1450 on November 12, 2003.



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